Commentary: If economic expansion threatens public health, should epidemiologists recommend recession?

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Let us stipulate, for the sake of argument, that econometric analyses such as those described in this issue of the International Journal of Epidemiology correctly characterize the association between the performance of the US economy and all cause, age standardized mortality, and that the relationship generalizes to other times and more functionally and geographically discrete economies. Epidemiologists would be left, we believe, with at least two questions. First, what can we infer regarding the effect of changing economies on health from these findings? Second, what do these inferences imply for theory or public health practice?

We do not think that epidemiologists will, or should, infer from such econometric findings that loss of jobs and or income, the most feared experiences presumably inflicted by contracting economies,1 make people healthier. Such an inference would be inconsistent with the belief, widely held among epidemiologists, that ecological associations tell us nothing about individual-level associations.2 More important, such an inference would be inconsistent with findings from the large body of epidemiological studies of persons put out of work (see Kasl et al.3 and chapter 2 in Dooley and Prause4 for excellent introductions to the work).

Results of epidemiological studies of job losers differ from place to place and time to time but none have reported reduced morbidity or mortality among those put out of work.4–12 In Sweden, for example, observation of every person put out of a job by the closing of businesses in 1987 and 1988 has led to the discovery of excess mortality in the years immediately following job loss.14 A major study of job losers near retirement age in the US reports no increased risk of myocardial infarction but a significant increase in strokes,14 while a large prospective study of nurses reports increased myocardial infarction among those who have lost jobs.12

How then, can epidemiologists reconcile the findings reported in this issue with the individual level research? We would have to conclude that the econometric findings arise from a circumstance in which persons in a contracting labour market who do not lose jobs become healthier. Does any research support this intuition? Yes. Individual level research reports that persons who remain employed when unemployment increases reduce their consumption of alcohol and exhibit less antisocial behaviour.16,17 This ‘inhibition’ effect has been attributed to attempts by those who fear job loss to become more like the ideal employee.18 Accident trauma, particularly that in the workplace,19 may also decrease in times of reduced production. Therefore, it could be that the contraction of an economy induces increased morbidity and mortality among the unemployed, but reduces risk taking and, therefore, morbidity and mortality among those who remain employed. The findings reported in this issue suggest that the ‘net effect’ of these two mechanisms in the US in many of the years studied was to reduce mortality.

What would this ‘net effect’ interpretation mean for theory and practice? It would leave unaffected the large body of empirically supported theory arguing that the most stressful experiences inflicted by a contracting economy induce excess morbidity among those who experience them.4 The ‘net effects’ interpretation would affect theory only in that it would add ecological support to the ‘inhibition’ argument already supported by individual-level research.16,17

The ‘net effect’ interpretation has few implications for public health practice. Any efforts currently being made or planned to reduce morbidity among job losers should continue because the ecological findings imply nothing about the effect of job loss on the health of job losers. Indeed, the ‘net effect’ interpretation suggests that during periods of economic contraction, public health programmers could move resources previously committed to reducing morbidity among employed persons to efforts focused on job losers since the former may pursue more salutary behaviour without inducement.

We started this commentary stipulating the validity of the econometric analyses reported in this issue. We, however, question the external validity of econometric estimates based on annualized indicators of the ‘national’ economy. While such grossly aggregated indicators may gauge phenomena important in macro-economic theory, we doubt they accurately describe the experiences of workers in many labour markets in the US. The aggregation suggests not only a spatial ecological fallacy but also a temporal ecological fallacy. To demonstrate this point we studied monthly stroke deaths in California, a geographic area with many fewer, more closely linked, labour markets than those in the US as a whole, from 1989 to 2001. If economic expansion were a pathogenic force on the population, monthly incidence of stroke deaths should move away from expected values in a direction opposite to that of monthly changes in the detrended and deseasonalized number of persons laid off from their jobs (i.e. persons filing claims for unemployment compensation). If, on the other hand, the epidemiological

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findings\textsuperscript{15} are correct, these deaths should move in the same
direction with lost jobs. Following the logic offered in epi-
demiological literature for such tests,\textsuperscript{20} we used Box-Jenkins
routines to remove autocorrelation, including seasonality, from
the stroke mortality series and, through differencing, removed
the trend and seasonal cycle in the count of layoffs. We then
estimated the synchronous and lagged (up to 3 months)
association between the series. Stroke deaths moved positively
with layoffs (detailed analyses available from the first author).
Therefore, we caution readers against inferring that estimates
based on annualized data aggregated over the entire United
States will describe the circumstances in any of the country’s
scores of labour markets.

Do the econometric findings described in this issue contribute
anything new to either epidemiological theory or public health
practice? We think not, because epidemiologists can reconcile
the findings with the considerable individual level research
only by attributing them to the inhibition effect already well
described in epidemiological literature. We further suggest that
the temporal and spatial aggregation of the work calls the
validity of the findings into question.

We also doubt that public health practice would change
under the assumption that the econometric findings are valid.
The work, by virtue of its ecological nature, should not threaten
any programme or policy based on the assumption that those
suffering job loss might be deserving subjects of prevention
efforts.\textsuperscript{21} Moreover, we doubt that any responsible epide-
miologist would, based on such findings, advise an elected or
appointed public official to allow or encourage economic
contraction as a means to improve public health.

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